

NASA certifies new ascent flight dynamics officer

By Nicole Cloutier

Capping more than a year and a half of intense simulation and trajectory training and seven years as an orbit and entry Flight Dynamics Officer, Lisa Shore, United Space Alliance, has been certified as an ascent FDO. This designation also makes her the first female ascent FDO in NASA history.

"It's been several years since we've certified someone for ascent FDO, so this is a tremendous achievement," said Steve Stich, NASA ascent/entry flight dynamics group lead. "Lisa not only completed her certification, but also paved the way for future ascent FDO certifications through her hard work and dedication in development of an Ascent/Entry FDO Trainer."

The ascent FDO position is considered one of the most difficult positions in the control room hierarchy. FDOs, pronounced "fido," plan maneuvers and monitor shuttle trajectory in conjunction with the Guidance and Procedures Officer. As with other mission control positions, FDO assignments are divided into three mission phases: orbit, entry, and ascent. The ascent FDO is responsible for monitoring the shuttle's trajectory during the critical eight and a half minutes immediately after launch through the orbiter insertion burn at about forty-five minutes into the mission. They also prepare the launch window computations and abort-runway selections as well as manage the multitude of abort options, should a critical problem arise.

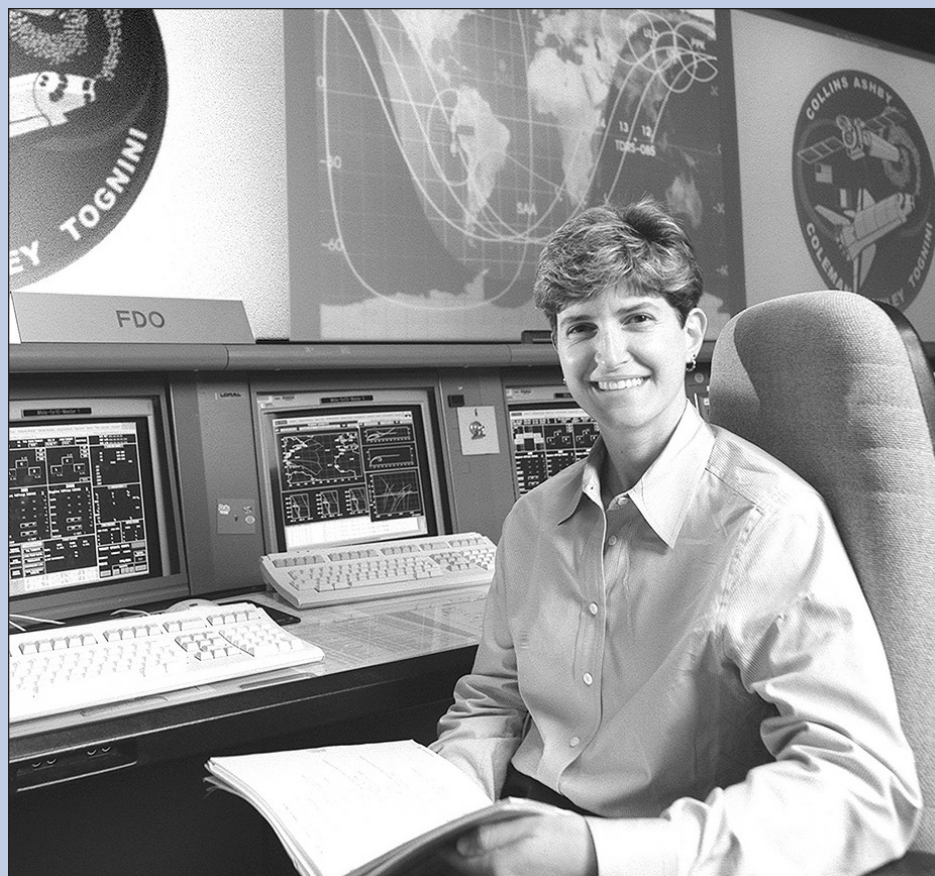
"Ascent is a very complicated time frame," added Keith Fletcher, flight dynamics manager for USA. "It's little more than eight and a half minutes long and decisions have to be made very quickly. You must know what to do without hesitation."

Because the position is so demanding, FDO certification mandates a stringent serial training regimen, starting with orbit FDO training to entry FDO and then to ascent FDO. Training for each FDO position can take up to 18 months and is supplemented by Trajectory Officer training prior to each FDO training phase. The entire process, starting from orbit to ascent FDO, can take several years and is filled with hundreds of hours of integrated simulations.

"Everyone was very supportive," said Shore. "The hardest part was adjusting to everyone's expectations during simulations. They were accustomed to working with a very experienced FDO, but while I was still learning, the whole team and the flight directors were behind me."

Shore also credits the two incumbent ascent FDOs with helping her attain this goal. For the past year and a half, Ed González, NASA, and Carson Sparks, USA, have been the only ascent FDOs certified to support shuttle missions. Despite their strenuous work schedule, they were very supportive.

"I'm delighted that Lisa has joined the ranks of certified ascent FDOs," said González. "She is already contributing greatly to our group by revising console procedures and devising new and



JSC Photo S99-05841 by Robert Markowitz

Lisa Shore will christen her certification as ascent flight dynamics officer with STS-93.

innovative software improvements. Her efforts in leading the completion of our new ascent/entry trainer software will greatly decrease training time for FDOs and GPOs in the future."

Shore, a University of Michigan graduate, started at JSC in 1986 in orbit flight design. In 1990, she was selected to begin training as an orbit FDO in the flight dynamics organization. Since then, Shore estimates she has supported about

30 missions, but says she's most excited about the next one.

"That is what I'm really looking forward to now," said Shore, who will initiate her certification with the launch of STS-93. "I'm ready to join the ranks of the ascent FDOs who have gone before me and make that 'Press to MECO' call with vigor." ■

Mukai receives international honor



Photo by Gib Kirkham

NASDA Astronaut Dr. Chiaki Mukai was among the winners of the Ninety-Nines' Forest of Friendship Award. Shown here is Mukai with fellow award recipient Capt. Angela Masson, Ph.D., American Airlines (third and fourth from right) with Ninety-Nines of Japan (left to right): Mami Hamano; Mari Tanaka; Yoko Kitano, chairman, Japan Women's Association of Aeronautics; Chickako Idogaki; Noriko Hosoya; Yasuko Ishiyama; Rikako Carpenter, ceremony chair; and Reiko Kawai.

The Ninety-Nines, an international organization of more than 6,500 female pilots, recently honored Astronaut Dr. Chiaki Mukai as a recipient of the 1999 Forest of Friendship Award. The award, presented to Mukai at a ceremony in Tokyo, Japan earlier this year, is given to men and women who have demonstrated a commitment to aviation through leadership, support, friendship, education or through their own pioneering efforts in aviation or aerospace.

A plaque commemorating Mukai as a recipient was installed on Memory Lane on June 19. Memory Lane is a trail of granite plaques for more than 700 distinguished honorees, such as Amelia Earhart, Jeana Yeager, President George Bush and Col. Eileen Collins, that winds through the Ninety-Nines' International Forest of Friendship in Atchison, Kansas. ■